HEAT CONTROLLER, INC.

OWNER'S MANUAL

Inverter Single Zone Ductless Mini Split Heat Pump

VMH 30/36 Series
Version C

Heat Controller, Inc. • 1900 Wellworth Ave. • Jackson, MI 49203 • (517)787-2100 • www.heatcontroller.com

CONTENTS

SAFETY PRECAUTIONS

Warning 3
Caution 4

OPERATING INSTRUCTIONS

Identification of parts 5
LED display features 6
Operating conditions.....7
Manual operation 7
Airflow direction control 8
Operational modes 9

CARE AND MAINTENANCE

Care and maintenance 10

OPERATION TIPS

Operation tips 12

TROUBLESHOOTING TIPS

Troubleshooting tips 14

⚠ CAUTION

- Contact an authorized service technician for repair or maintenance of this unit.
- Contact the authorized installer for installation of this unit.
- If the power cord is to be replaced, replacement work shall be performed by authorized personnel only.
- Installation work must be performed in accordance with local and national electrical codes by authorized personnel only.

SAFETY PRECAUTIONS

To prevent injury to the user or other people and property damage, the following instructions must be followed. Incorrect operation due to ignoring the instructions may cause harm or damage. The seriousness is classified by the following indications:

⚠WARNING	This symbol indicates the possibility of death or serious injury.
⚠ CAUTION	This symbol indicates the possibility of injury or damage to property.

■ Meanings of symbols used in this manual are as shown below:

⊘	**Never do this.**
!	**Always do this.**

⚠ WARNING

! Connect the power properly, following all local and national electric codes.
- Otherwise, it may cause electric shock or fire due to excess heat generation.

⊘ Do not operate or stop the unit by switching on or off the power.
- It may cause electric shock or fire due to heat generation.

⊘ Do not damage or use an unspecified power cord.
- It may cause electric shock or fire.

⊘ Do not modify power cord length or share the outlet with other appliances
- It may cause electric shock or fire due to heat generation.

⊘ Do not operate with wet hands or in damp environment.
- It may cause electric shock.

⊘ Do not direct airflow at room occupants only, allow air to disperse into the room.
- This could damage your health.

! Always ensure proper electrical grounding.
- No grounding may cause electric shock.

⊘ Do not allow water to get into electric parts.
- It may cause failure of machine or electric shock.

! Always install circuit breaker and a dedicated power circuit.
- No installation may cause fire and electric shock.

! Disconnect the power if strange sounds, smells, or smoke comes from the unit.
- It may cause fire and electric shock.

⊘ Do not drink water drained from air conditioner.
- It contains contaminants and could make you sick.

⊘ Do not open the unit during operation.
- It may cause electric shock.

! Use the correctly rated breaker or fuse.
- There is risk of fire or electric shock.

⊘ Do not use the power cord close to heating appliances.
- It may cause fire and electric shock.

⊘ Do not disassemble or modify unit.
- It may cause failure and electric shock.

! Ventilate room before operating air conditioner if there is a gas leakage from another appliance.
- It may cause explosion, fire and, burns.

⊘ Do not use the appliance near flammable gas or combustibles, such as gasoline, benzene, thinner, etc.
- It may cause an explosion or fire.

SAFETY PRECAUTIONS

⚠ CAUTION

When the air filter is to be removed, do not touch the metal parts of the unit.

- It may cause an injury.

Do not clean the air conditioner with water.

- Water may enter the unit and degrade the insulation. It may cause an electric shock.

Ventilate the room well when used together with a stove, etc.

- An oxygen shortage may occur.

When the unit needs to be cleaned, switch off, and turn off the circuit breaker.

- Do not clean unit when power is on as it may cause fire and electric shock, or injury.

Do not put a pet or house plant where it will be exposed to direct air flow.

- This could injure the pet or plant, allow airflow from appliance to disperse into the room.

Do not use for special preservation purposes.

- Do not use this air conditioner to preserve precision devices, food, pets, plants, and art objects. It may cause deterioration of quality, etc.

Do not clean with strong detergants. Use a soft dry cloth for cleaning.

- Appearance may be deteriorated due to change of product color or scratching of its surface.

Do not place obstacles around air-inlets or inside of air-outlet.

- It may cause failure of appliance or accident.

Turn off the main power switch when not using the unit for a long time.

- It may cause failure of product or fire.

Always insert the filters securely. Clean filter once every two weeks.

- Operation without filters may cause failure.

Do not place heavy object on the power cord and take care so that the cord is not compressed.

- There is danger of fire or electric shock.

Use caution when unpacking and installing. Sharp edges could cause injury.

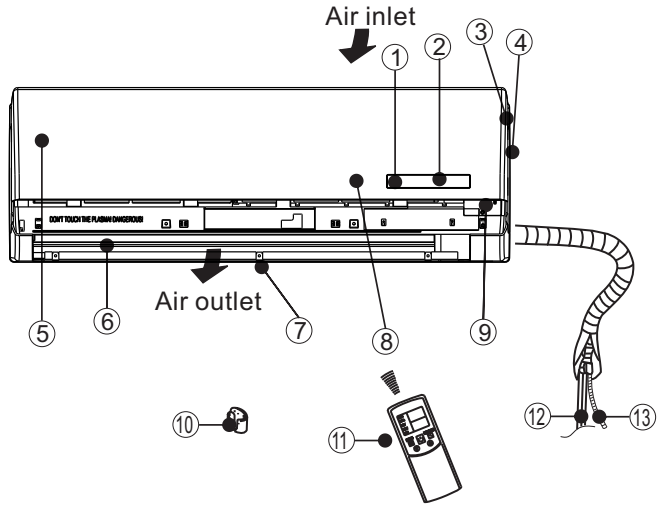
If water enters the unit, turn the unit off and disconnect the power, contact a qualified service technician.

OPERATING INSTRUCTIONS

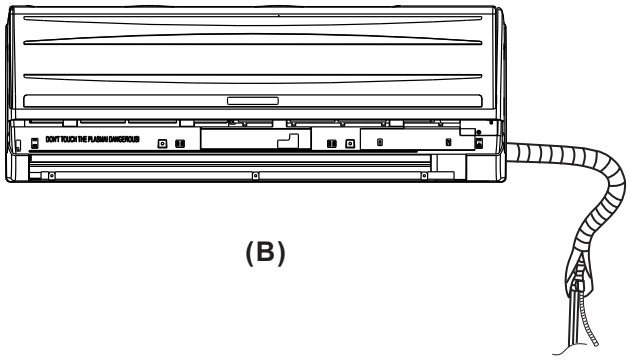
Identification of parts

Indoor unit

Note: The indoor unit you purchased may look like one of the following:



(A)



(B)

Indoor unit

1. Signal receptor
2. Display panel
3. Panel frame
4. Chassis
5. Front panel
6. Horizontal louver
7. Vertical louver(on some models)
8. Air filter(under the panel)
9. Manual control button
10. Remote controller holder
11. Remote controller
12. Connecting pipe
13. Drain hose

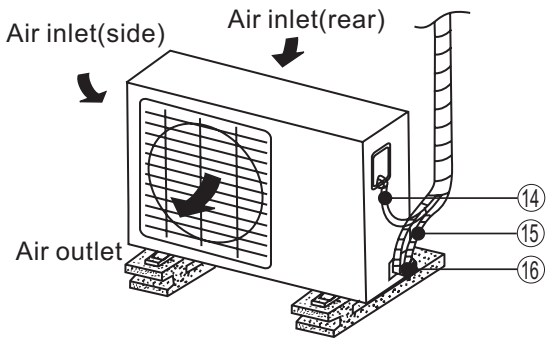
Outdoor unit

14. Connecting cable
15. Connective pipe
16. Base valve

NOTE:

- All the pictures in this manual are for explanation purposes only. Your air conditioner may be slightly different.

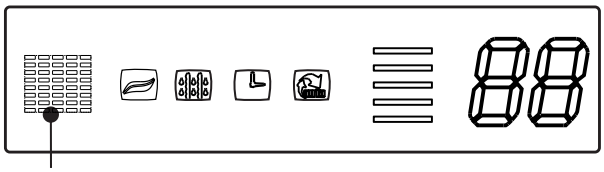
Outdoor unit



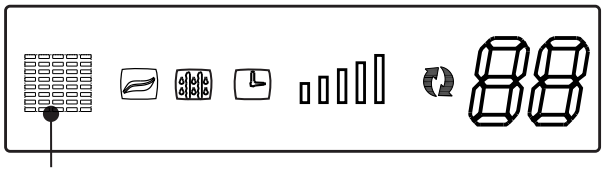
OPERATING INSTRUCTIONS

LED display features

The actual display on your appliance may differ slightly, but the features and functions still apply:



(1)



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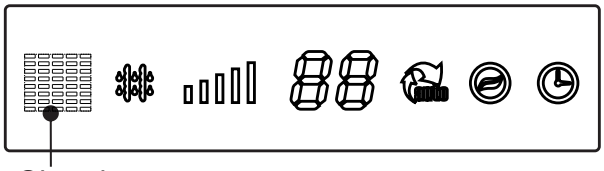

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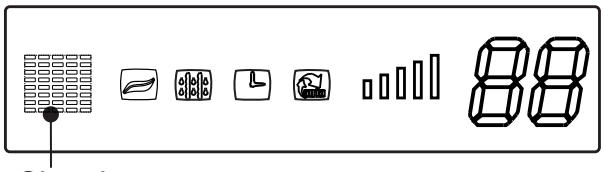


(4)

TIMER indicator
This indicator illuminates when TIMER program is set ON/OFF.

AUTO indicator
This indicator illuminates when the air conditioner is in AUTO operation.

OPERATION FREQUENCY indicator
This display is separated into five zones. The zones illuminate based on the frequency of the compressor. For example: high frequency will illuminate all zones, the lower the frequency the less zone will illuminate.

TEMPERATURE indicator

A) This displays the temperature point. When set temperature is changed, this indicator begins to flash, and stops 20 seconds later.

B) In fan only mode, the temperature indicator displays the room temperature.

C) This may also display any error or protection codes needed to trouble shoot the problem.

DEFROST indicator

This indicator illuminates when the air conditioner starts defrosting automatically or when the warm air control feature is activated in heating operation.

CLEAN AIR indication lamp:
Lights up when CLEAN AIR feature is activated.

OPERATING INSTRUCTIONS

NOTE: This manual does not include Remote Controller Operations, see the Remote Controller Instruction manual packed with the unit for details.

Operating conditions

Mode / Temperature	Cooling Operation	Heating Operation	Drying Operation
Room temperature	⩾62°F(17°C)	⩽88°F(30°C)	>50°F(10°C)
Outdoor temperature	32°F ~ 122°F (0°C ~ 50°C)	5°F ~ 92°F (-15°C ~ 34°C)	5°F ~ 122°F (15°C ~ 50°C)
	5°F~122°F (-15°C~50°C) For the models with low ambient controls.		

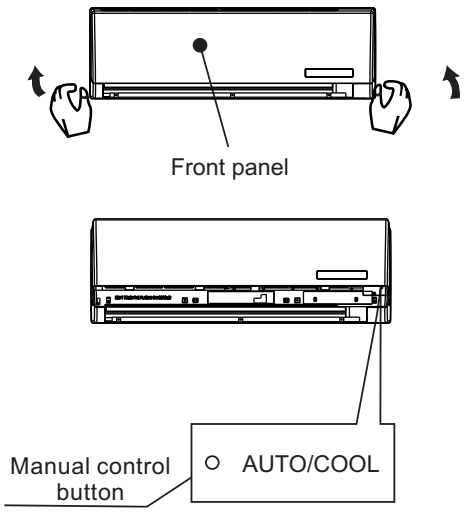
CAUTION:

1. Optimum performance will be achieved within these operating temperatures.
2. If air conditioner is used outside of the above conditions, certain safety protection features may come into operation and cause the unit to function abnormally.
3. If the air conditioner operates in excess of 80% relative humidity, the surface of the air conditioner may attract condensation. Please set the vertical air flow louver to its maximum open angle (vertically to the floor), and set the fan to HIGH mode.

Suggestion: For units with crankcase heaters when the outside ambient temperature is below 32°F(0°C), we strongly recommend you to keep the machine plugged in order to guarantee it running smoothly.

Manual operation

Manual operation can be used temporarily in case the remote controller is disabled or when maintenance is necessary.



NOTE: The unit must be turned off before using the manual control button. If the unit is operational, continue pressing the manual control button until the unit is off.

① Open and lift the front panel up to an angle until it remains fixed with a clicking sound.

② One press of the manual control button will lead to forced AUTO operation. If press the button twice within five seconds, the unit will operate under forced COOL operation.

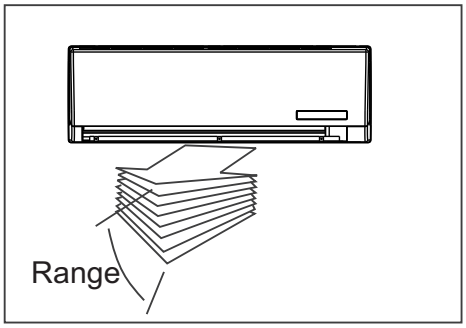
③ Close the panel firmly to its original position.

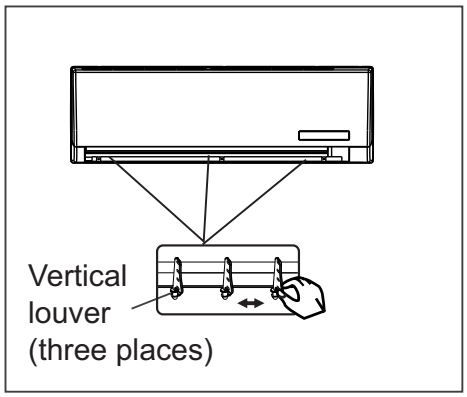
CAUTION:

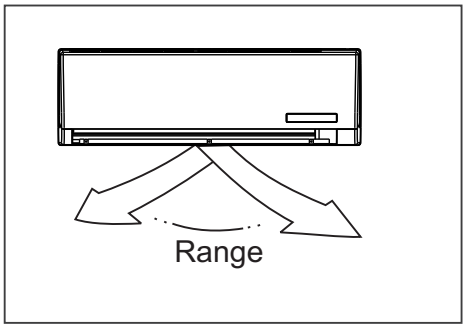
- This button is used for testing purposes only. To restore the remote controller operation,
- use the remote controller directly to operate the unit. This will override the manual operation.

OPERATING INSTRUCTIONS

Airflow direction control







- Adjust the air flow direction properly otherwise, it might cause discomfort or uneven room temperatures.
- Adjust the horizontal louver using the remote controller.
- Adjust the vertical louver manually.

To set the vertical air flow(Up--Down) direction

Perform this function while the unit is in operation. Use the remote controller to adjust the air flow direction. The horizontal louver can be moved at a range of 6° for each press, or swing up and down automatically depending on model. Please refer to the REMOTE CONTROLLER OPERATION MANUAL that come with your unit for details.

To set the horizontal air flow direction (left - right)

- Move the vertical louver manually to adjust the air flow in the direction you prefer.
  IMPORTANT: Before adjusting the vertical louvers, the supply power must be disconnected to prevent electrical shock or injury.
- For some models, the vertical louver can be adjusted by using the remote controller. Please refer to the REMOTE CONTROLLER OPERATION MANUAL that comes with your unit for details.

⚠ CAUTION

- Do not operate the air conditioner for long periods with the air flow direction set downward in cooling or dehumidifying mode. Otherwise, condensation may occur on the surface of the horizontal louver causing moisture to drop on to the floor or on furnishings.
- Do not move the horizontal louver manually unless it is necessary. Always use the remote controller, where applicable.
- When the air conditioner is started immediately after it was stopped, the horizontal louver might not move for approximately 10 seconds.
- Open angle of the horizontal louver should not be set too small, as COOLING or HEATING performance may be impaired due to too restricted air flow area.
- Do not operate unit with horizontal louver in closed position.
- When the air conditioner is connected to power (initial power), the horizontal louver motor may generate a sound for 10 seconds, this is a normal occurance.

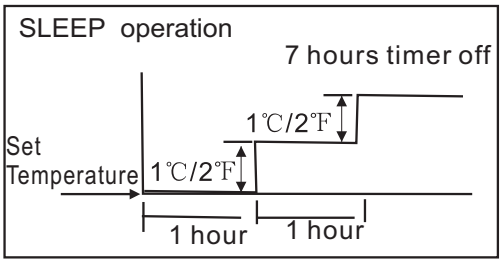
OPERATING INSTRUCTIONS

Operational modes

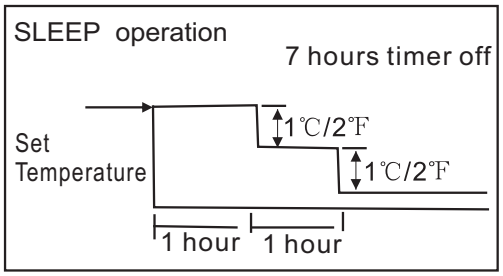
AUTO operation

- When you set the air conditioner to AUTO mode, it will automatically select cooling, heating or fan only operation depending on what temperature you have set and the current room temperature.
- The air conditioner will control room temperature automatically around the temperature set point you selected.
- If the AUTO mode is uncomfortable, you can select desired conditions manually by changing the mode to cooling, heating, or fan only directly.

SLEEP operation



Cooling



Heating

1℃/2℉

SLEEP operation

When you push SLEEP button on remote controller during cooling, heating, or AUTO operation, the air conditioner will automatically increase (cooling) or decrease (heating) $2^{O}F/1^{O}C$ per hour for the first 2 hours, then hold steady for the next 5 hours, after that it will switch off. This characteristic maintains both energy saving and comfort in night operation.

DRYING operation

- The fan speed will be automatically controlled under dry operation.
- During the dry operation, if the room temperature is lower than $50^{O}F(10^{O}C)$, the compressor stops operation and restarts when the room temperature is above $54^{O}F(12^{O}C)$.

Optimal operation

To achieve optimal performance, please note the following:

- Adjust the air flow direction correctly so that it is not directed on people, but rather in the room
- Adjust the temperature to achieve the highest comfort level. Do not adjust the unit to excessive temperature levels.
- Close doors and windows on COOL or HEAT modes, or performance may be reduced.
- Use TIMER ON button on the remote controller to select a time you want to start your air conditioner.
- Do not put any objects near air inlet or air outlet, as the efficiency of the air conditioner may be reduced and the air conditioner may stop running.
- Clean the air filter periodically, otherwise cooling or heating performance may be reduced.
- Do not operate unit with horizontal louver in the closed position.

CARE AND MAINTENANCE

Cleaning the Grille, Case and Remote Controller

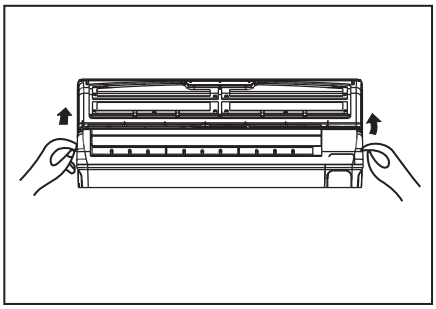
NOTE: Supply power must be disconnectd before cleaning the indoor unit.

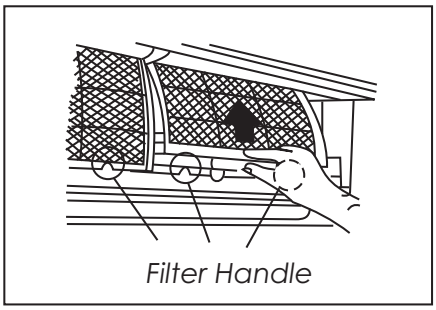
- Turn the system off before cleaning. To clean, wipe with a soft, dry cloth. Do not use bleach or abrasives.

⚠ CAUTIONS

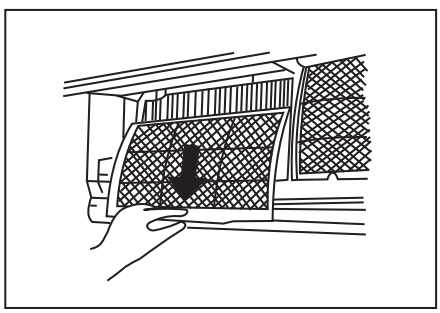
- A cloth dampened with cold water may be used on the indoor unit if it is very dirty. Then dry it with a dry cloth after cleaning.
- Do not use a chemically treated cloth or duster to clean the unit.
- Do not use benzine, thinner, polishing powder, or similar solvents for cleaning. These may cause the plastic surface to crack or deform.
- Never use water hotter than 104°F/40°C to clean the front panel, it could cause deformation of discoloration.

Cleaning the air filter





Filter Handle



Cleaning the air filter

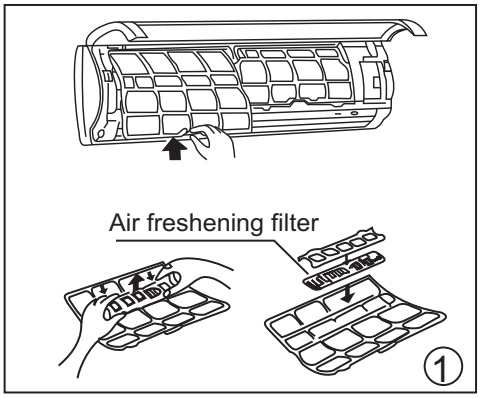
⚠ Caution

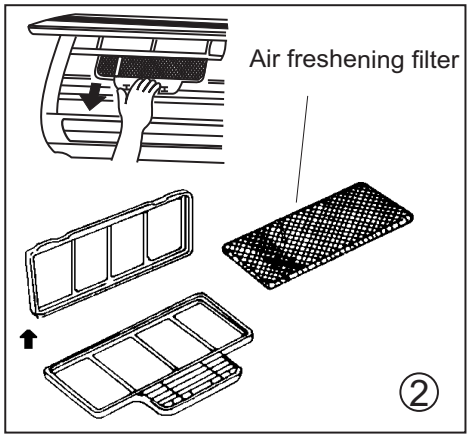
- Do not touch the metal parts of the unit when removing the filter. Injuries can occur when handling sharp metal edges.
- Do not use water to clean inside the air conditioner. Exposure to water can destroy the insulation, leading to possible electric shock.
- When cleaning the unit, first make sure that the power and circuit breaker are turned off.

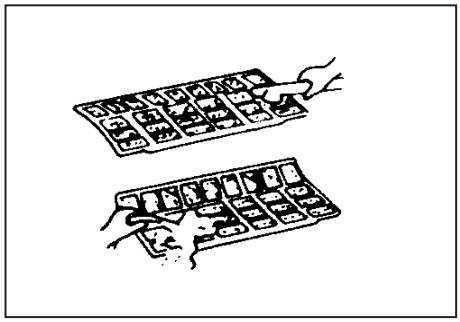
A clogged air filter reduces the cooling efficiency of this unit. Please clean the filter once every 2 weeks.

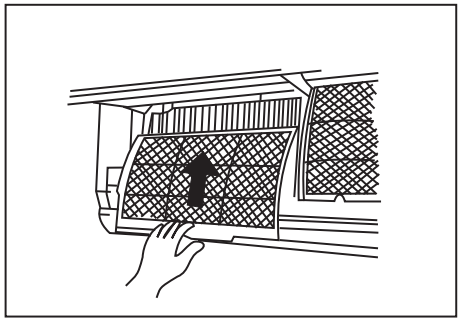
1. Lift the indoor unit panel up to an angle until it stops with a clicking sound.
2. Hold the handle of the air filter and lift it up slightly to remove it from the filter holder, then pull it downwards.
3. Remove the AIR FILTER from the indoor unit.
   - Once every two weeks, clean the AIR FILTER with a vacuum cleaner or water, then dry it in cool place.

CARE AND MAINTENANCE









4. Remove the Air Freshening Filter from its support frame (on some models).
   The removing and installation methods are slightly different, see the pictures marked ❶ and ❷on the left.
   - Clean the air freshening filter at least once a month, and replace it every 4-5 months.
   - Clean it with vacuum cleaner, then dry it in cool place.
5. Install the air freshening filter back into position.
6. Insert the upper portion of air filter back into the unit, taking care that the left and right edges are aligned correctly and place filter into position.

Maintenance

If you plan to store the unit for a long time, perform the following:

(1) Operate the fan for about half a day to dry the inside of the unit.
(2) Stop the air conditioner and disconnect power. Remove the batteries from the remote controller.
(3) The outdoor unit requires periodic maintenance and cleaning. Do not attempt to do this yourself. Contact an authorized servicer.

Checks before placing back into operation

- Check that the wiring is not broken off or disconnected.
- Check that the air filter is installed.
- Check if the air outlet or inlet is blocked after the air conditioner has not been used for a long time.

OPERATION TIPS

The following events may occur during normal operation.

1. **Protection features.**

Compressor protection

- The unit is programmed to protect the compressor by not letting it re-start for 3 minutes after being stopped.
- **Anti-cold air (Cooling and heating models only)**
  The unit is designed not to blow cold air on HEAT mode, when the indoor heat exchanger is in one of the following three situations and the set temperature has not been reached.
  A) When heating has just starting.
  B) Defrosting.
  C) Low temperature heating.

Defrosting (Cooling and heating models only)

- The indoor or outdoor fan will stop running when defrosting.
- Frost may be generated on the outdoor unit during heat cycle when outdoor temperature is low and humidity is high, resulting in lower heating efficiency of the air conditioner.
- During this condition the air conditioner will stop heating operation and start defrosting automatically.
- Defrost time may vary from 4 to 10 minutes according to the outdoor temperature and the amount of frost build up on the outdoor unit.

2. **A white mist coming out of the indoor unit**

- A white mist may generate due to a large temperature difference between air inlet and air outlet on COOL mode in an indoor environment that has a high relative humidity.
- A white mist may generate due to moisture generated from defrosting process when the air conditioner restarts in HEAT mode operation after defrosting.

3. **Typical sounds**

- You may hear a low hissing sound when the compressor is running or has just stopped running. This sound is the sound of the refrigerant flowing or coming to a stop.
- You can also hear a low "squeak" sound when the compressor is running or has just stopped running. This is caused by heat expansion and cold contraction of the plastic parts in the unit when the temperature is changing.
- A noise may be heard due to louver restoring to its original position when power is first turned on.

4. **Dust is blown out from the indoor unit.**
   This is a normal condition when the air conditioner has not been used for a long time or during first use of the unit, and an accumulation of dust has formed on the unit's outlet. Cleaning dust off of the unit before operation may prevent this.

5. **A peculiar smell comes out of the indoor unit.**
   This is caused by the indoor unit giving off smells permeated from building material, from furniture, or smoke. However, a burning smell may mean something is wrong with the unit. Power off the unit and call an authorized servicer if such smell exists.

6. **Operating mode changes to fan only mode.**
   When indoor temperature reaches the temperature set point on air conditioner, the compressor will stop automatically, and the air conditioner changes to FAN only mode. The compressor will start again when the indoor temperature rises in above the set point in COOL mode or falls in below the set point in HEAT mode.

OPERATION TIPS

Condensation

7. Dripping water may generate on the surface of the indoor unit when cooling in a relativley high humidity (higher than 80%). Adjust the horizontal louver to the maximum air outlet position and select HIGH fan speed to avoid this.

8. **Heating mode**
   The air conditioner draws in heat from the outdoor unit and releases it via the indoor unit during heating operation. When the outdoor temperature falls, heat drawn in by the air conditioner decreases accordingly. At the same time, the heat load of the air conditioner increases due to a larger difference between indoor and outdoor temperatures. If a comfortable temperature can't be achieved by the air conditioner, we suggest you use a supplementary heating device.

9. **Auto-restart function**
   Power failure during operation will stop the unit completely.
- For the unit without Auto-restart feature, when the power restores, the OPERATION indicator on the indoor unit starts flashing. To restart the operation, push the ON/OFF button on the remote controller.
- For the unit with Auto-restart feature, when the power restores, the unit restarts automatically with all the previous settings preserved by the memory function. For some models, the louver will open automatically to a pre-programmed position.

Electrical Interference

10. Electronic equipment which was radio transmitters may interfere with the units signals and cause it to malfunction, if in close proximity. If this occurs, disconnect the unit with power and then re-connect the unit with power again. Push the ON/OFF button on the remote controller to restart operation. Ensure the unit is far away from and electrical interface sources to prevent this.

TROUBLESHOOTING TIPS

Troubleshooting Tips

Stop the air conditioner immediately if one of the following errors occur. Disconnect the power and contact the nearest authorized servicer.	
Trouble	If the following error codes appear on the LED display, disconnect the power and contact an authorized servicer: E0,E1,E2,E3,E4,E5,E6,E7,E8 or P0,P1,P2,P3,P4,P5, P6.
	Fuse blows or circuit breaker trips frequently.
	Indicator or lights flash rapidly and can not be stopped by disconnecting the power and then connecting it in again.

Malfunctions	Cause	What should be done?
Unit does not start or operate at all	Power to the unit may be interrupted.	Wait for the power to be restored, call your local utility distributor or an electrician to address power supply issues.
	Fuse may have blown out or circuit breaker has tripped.	Replace the fuse or flip the circuit breaker back on.
	Batteries in Remote controller may be dead or installed correctly.	Replace the batteries and ensure the polarities are correct.
	Is the unit's times set incorrectly?.	Wait or cancel timer setting.
Fan is operating but unit is poorly cooling or heating	Temperature setting may be set inappropriately.	Set temperature correctly.
	A filter may be blocked.	Clean the air filter to prevent air flow blockages.
	Doors or Windows are open inside the room you are to attempting to heat or cool.	Close the doors and windows, within the area to be cooled or heated to increase efficiency and performance.
	Air inlet or outlet of indoor or outdoor unit is blocked.	Clear obstructions away first, then restart the unit.
	Compressor will not restart.	Wait approximately 3 minutes for the compressor to turn on to begin heating/cooling.
If the problems persist after performing these checks, or if you notice burning smells, or the problem can't be resolved by disconnecting and reconnecting power, then immediately stop operating the unit and disconnect the power. Then call an authorized servicer.		

Notes: Do not attempt to repair the unit yourself.
Always consult an authorised service provider.

Design, material, performance data and components
subject to change without notice.

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THE QUALITY LEADER IN CONDITIONING AIR

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